DOCUMENT RESUME

ED 469 234 EA 032 013

AUTHOR	Cotton, Kathleen
TITLE	The Schooling Practices That Matter Most.
INSTITUTION	Association for Supervision and Curriculum Development, Alexandria, VA.; Northwest Regional Educational Lab., Portland, OR.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	2000-00-00
NOTE	43p.
CONTRACT	RJ96006501
AVAILABLE FROM	Association for Supervision and Curriculum Development, 1703 North Beauregard Street, Alexandria, VA 22311-1714 (Stock No. 300212S25: $6.95 members; $8.95 nonmembers). Tel: 703-578-9600; Tel: 800-933-2723 (Toll Free); Fax: 703-575-5400; Web site: http://www.ascd.org/.
PUB TYPE	Information Analyses (070) -- Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC02 Plus Postage.
DESCRIPTORS	Academic Achievement; *Classroom Environment; *Educational Improvement; *Educational Practices; Elementary Secondary Education; *Instructional Effectiveness; Leadership; Learning Strategies; School Safety

ABSTRACT

In their attempts to help educators improve student achievement, researchers have identified hundreds of effective school practices. However, there is no accurate picture of the relative effectiveness of effective practices or the ways various practices interact to produce results. Nevertheless, the data are plentiful enough to permit informed interpretation about the most beneficial schooling practices. This booklet draws on the general database of effective education practices to identify what appear to be the core contextual and instructional factors, or attributes, that enable students to learn successfully. The areas of research identified in this booklet rest on considerable research weight, are entirely or partially school controllable, and can be implemented without significant new expenditures. Fifteen effective-schooling attributes are identified here and grouped under two headings. Under the heading "Contextual Attributes" are the following: safe and orderly school environment; strong administrative leadership; primary focus on learning; maximizing learning time; monitoring student progress; academically heterogeneous class assignments; flexible in-class grouping; small class size; supportive classroom climate; parent and community involvement. Under the heading "Instructional Attributes" are the following: careful orientation to lessons; clear and focused instruction; effective questioning techniques; feedback and reinforcement; review/reteaching as needed. (Contains footnotes and 190 references.) (WFA)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 469 234

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

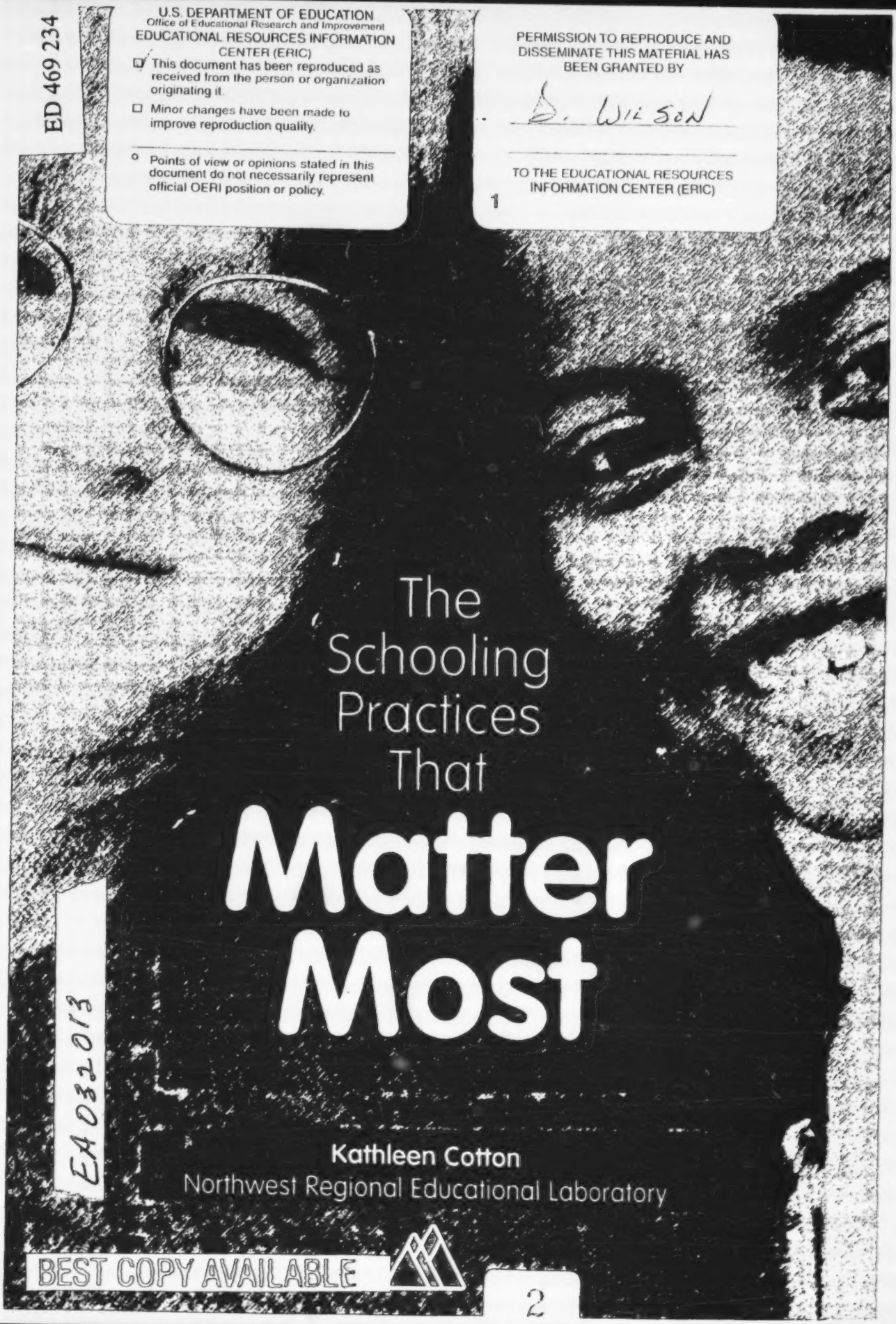
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

D. Wilson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

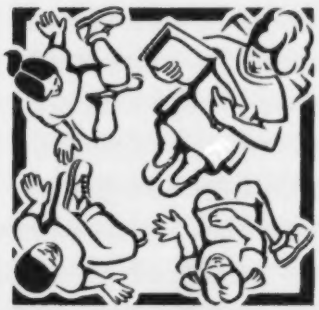


The Schooling Practices That Matter Most

Kathleen Cotton
Northwest Regional Educational Laboratory

EA 032 013

BEST COPY AVAILABLE



The Schooling Practices That Matter Most

Kathleen Cotton
Northwest Regional Educational Laboratory

Association for Supervision and Curriculum Development
Alexandria, Virginia

To order additional copies, contact:

Association for Supervision and Curriculum Development
1703 North Beauregard Street
Alexandria, VA 22311-1714
Attention: Customer Service Center
Phone: 800-933-2723
Fax: 703-575-5400

	ASCD Stock No.
Single copy	300212
Package of 20 copies	300212B

Copyright © 2000 by the Northwest Regional Educational Laboratory

This publication is based on work sponsored wholly, or in part, by the Office of Educational Research and Improvement (OERI), U.S. Department of Education, under Contract Number RJ96006501. The content of this publication does not necessarily reflect the views of OERI, the Department, or any other agency of the U.S. government.

Table of Contents

Acknowledgments iv

Introduction 1

Contextual Attributes 5

Safe and Orderly School Environment 6

Strong Administrative Leadership 8

Primary Focus on Learning 9

Maximizing Learning Time 10

Monitoring Student Progress 12

Academically Heterogeneous Class Assignments 13

Flexible In-Class Grouping 14

Small Class Size 15

Supportive Classroom Climate 17

Parent and Community Involvement 19

Instructional Attributes 21

Careful Orientation to Lessons 22

Clear and Focused Instruction 23

Effective Questioning Techniques 23

Feedback and Reinforcement 24

Review/Reteaching as Needed 25

Conclusion 26

Bibliography 27

Acknowledgments

My thanks to those whose good advice on an earlier draft considerably strengthened this paper: Lorin Anderson of the University of South Carolina; Jerry Bamburg of the University of Washington; Jere Brophy of Michigan State University; David Conley of the University of Oregon; Eugene Eubanks of the University of Missouri-Kansas City; Brenda Hankins, consultant to the Mississippi Department of Education; and Daniel Levine of the University of Nebraska-Omaha.

Introduction

In their attempts to help educators improve student achievement, researchers have identified and disseminated information about hundreds of "effective schooling practices" over the past 30 years. From the "effective schools" and "teacher effects" research initiated in the 1970s to the present day, this information base continues to grow. Based on this work, educators launching school improvement projects can now consult this information to increase their likelihood of success in improving student performance.

Clearly, though, schools and districts cannot undertake to implement the hundreds of new practices identified in the effective practices literature. They must make choices—choices based on locally determined goals, state standards, and other factors. Ideally, too, they should be able to identify and implement those practices that are the most critical to student success; that is, those practices which should be in place in order for all students in a school to meet their school's objectives for them. And, indeed, some researchers, using modern statistical methods such as meta-analysis, have sought to identify which educational practices "pack the greatest punch" for raising student performance.

For the most part, however, we do not have an accurate picture of the *relative effectiveness* of "effective practices" or of the ways practices interact to produce results. Thus, for the person who asks, "what combination of schooling conditions and practices holds the greatest promise for improving student learning?" we have no scientifically provable or globally agreed-upon answer.

If that is the bad news, however, we also have the good news that there are data plentiful enough to permit informed interpretation about the most beneficial schooling practices. This paper, then, is an exercise in informed interpretation. It draws upon the general database of effective educational practices to identify what appear to be the core contextual and instructional factors that enable virtually all students to learn successfully. Along the way, I offer my reasons for selecting these particular attributes, identify where the supporting research comes from, explain why certain other "candidates" were not selected, and make some observations about how the attributes work together to benefit students' learning.

This last point is particularly important in our current era of comprehensive school reform. The findings of the early school and teacher effects researchers were sometimes regarded as discrete entities, without sufficient attention to their interactions or to their effects over time. Many who wanted to improve their schools generated checklists of desirable practices based on the findings and sought to implement them in a parallel but not necessarily integrated way.

Today, educators and researchers recognize that genuine and lasting school improvement is unlikely to be achieved in this manner. Experience with school reform efforts, the development and use of more sophisticated research designs,

and a growing understanding that the *school* is the most meaningful unit of analysis, have led to a more holistic view of what it takes to raise student performance. "Effective practices" cannot be maximally effective without *schoolwide* buy-in and support, and because practices interact, they can affect one another's impact. For example, a sustained, schoolwide focus on the importance of learning facilitates teachers' use of proven instructional practices in the classroom. Or, to take a negative example, if too much potential instructional time is lost to student misbehavior, "housekeeping" matters, loudspeaker announcements, and so on, the beneficial effects of small class size cannot be realized.

We also know that effects can compound over time. To take the class size example again, research shows that children educated in small classes in the primary grades continue to outperform their counterparts from larger primary classes when they all move into the intermediate grades (U.S. Department of Education, 1998). Findings on student retention indicate that having to repeat third grade increases the likelihood that a student will drop out of high school (Woods, 1995). One could cite many other examples, the main point being that implementing effective practices in an integrated, sustained, schoolwide fashion holds much greater potential than a piecemeal approach. It is with this in mind that the following discussion is offered.

Turning to the research support for the assertions made here, it is important to recognize that it could—and in some other contexts *does*—encompass scores of pages.[1] To keep things to a manageable size here, I have chosen a dozen or so key support pieces for each contextual and instructional attribute I discuss. These include both studies and reviews, classic and less-well-known reports, as well as older and more recent research. I have taken this approach in order to provide a sense of what the research base underlying each variable is like and, I trust, to represent it fairly.

The effective schooling attributes I have identified as most crucial are as follows:

Contextual Attributes
Safe and orderly school environment
Strong administrative leadership
Primary focus on learning
Maximizing learning time
Monitoring student progress
Academically heterogeneous class assignments
Flexible in-class grouping
Small class size
Supportive classroom climate
Parent and community involvement

Instructional Attributes
Careful orientation to lessons
Clear and focused instruction
Effective questioning techniques
Feedback and reinforcement
Review/reteaching as needed

1 See Kathleen Cotton, *Research You Can Use to Improve Results.* Alexandria, VA: Association for Supervision and Curriculum Development, 1999.

To those familiar with the classic school and teacher effects research, these lists will provide few surprises. The early work of school effects researchers such as Brookover and Lezotte (1979) and Edmonds (1979), for example, identified factors such as strong administrative leadership and a schoolwide focus on learning among the attributes differentiating high-achieving schools from those schools with similar demographic profiles that evidenced lower achievement. And subsequent research has underscored the importance of these characteristics. The list of instruction-related practices, too, includes key attributes as identified in the classic work of teacher effects researchers such as Rosenshine (1976) and Brophy (1979). In fact, it is probably safe to say that the effective schooling findings first identified as essential by these researchers would still make the cut when evaluated in light of the research conducted in the years since. Rather than overturning earlier research, subsequent investigations have validated and added refinements to its findings, as well as focusing on areas not addressed in that earlier research.

Before looking in detail at what are termed here the critical attributes for high-performing schools, it may be helpful to make some general observations about these characteristics. First, I do not claim that they all need to be present in order for any given student to learn well. Many students come from families able to provide them sufficient experiences, materials, and support that the absence of some of these factors would not have too deleterious an effect on their school performance. Others have considerable native academic ability and can perform well in less-than-ideal circumstances. But if we are talking about educating *all* students to high standards, I would argue that all of these characteristics should be present.

Second, there are factors which bear a strong relationship to student performance that are not included here, because educators can affect them only minimally (e.g., school size) or not at all (e.g., socioeconomic status, parents' educational attainment).

Third, a word about school-controllable factors and practices that are not represented here. What about substance abuse prevention programs? Linkages between the school and health and social service agencies? Efforts to increase equity? Surely, one might argue, these are important, too. I agree, and I am well aware that my choices are assailable. I excluded these particular factors because their distance from student performance makes their impact more difficult to research, and, consequently, there is not, in my judgment, the breadth and depth of research support for them that exists for those I have selected. At the same time, I am certain there are other good candidates, and I expect disagreement. I would ask readers to hold this matter in abeyance as I describe my choices.

Fourth, as one reviewer of this paper encouraged me to make explicit, the attributes identified here relate to addressing the needs of *students*. Closely related to these elements are "a host of ... climate and capacity issues which focus on the environment for adults" (J. Bamburg, personal communication, June 12, 1999):

These, in turn, are influenced by district- and state-level policymakers. While these topics are beyond the scope of this paper, it is certainly true that a comprehensive picture of "effective practices" would need to include professional development, broadly representative decisionmaking procedures, collaboration, and other functions that bear on a school staff's ability to provide high-quality learning environments and instruction.

Fifth, items on the two lists differ in breadth, with the instructional elements being relatively narrow and specific, and the contextual factors being described more accurately as amalgams rather than as discrete practices. While there can be drawbacks to clustering unlike things, I have chosen to do so for two reasons: The research on which this paper is based routinely deals with these disparate components in the same breath, and the terms used in the list are those that are most familiar to educational researchers and practitioners alike. For clarification, however, I do discuss what each attribute consists of, citing the research in support of the parts as well as the whole.

Finally, the elements under discussion here have to do primarily with structure and method; and while I contend that they are critical components of educational success, they do not, in and of themselves, guarantee it. Presenting them here as keys to desirable schooling outcomes assumes that the educational goals they support are worthy and that the curriculum to which they are connected is of high quality. Setting trivial learning goals or imparting only superficial learning content will produce inferior results, no matter what else might be going on. Thus, implicit in discussions of elements such as "a primary focus on learning" and "clear and focused instruction" is the supposition that what is taught is worth knowing in the first place, and that it is treated in sufficient depth to engage students' interest and offer them a challenge.

Contextual Attributes

Safe and Orderly School Environment

The largely correlational effective schools research and the observational research on classroom management and discipline both point to the importance of a safe and orderly environment for student learning. This makes intuitive sense and is borne out by scores of research studies conducted over many years (Cotton, 1999).

At the school level, researchers, once they have noted a relationship to student achievement, commonly go on to identify typical qualities of a safe and orderly environment.[2] These include:

1. A visible and supportive principal[3]
2. Broad-based agreement about standards for student behavior
3. High behavioral expectations that are clearly communicated to students
4. Input from students, especially older ones, into behavior policies
5. Consistent application of rules from day to day and from student to student
6. A warm school climate whose signature feature is a concern for students as individuals
7. Delegation of disciplinary authority to teachers
8. For seriously disruptive students, in-school suspensions accompanied by support

Gaddy (1988) notes that "order as a product of coercion [and] order as a manifestation of self-discipline" (496) may look much the same to the casual observer. The above list of characteristics is therefore useful, because it helps to conceptualize order as the product of humanistic treatment of students—not merely quiet hallways at any price. As Edmonds (1979) noted in his analysis of schools that educate poor children effectively, "The school's atmosphere is or-

2 Findings about safe and orderly environments at the schoolwide level are from the work of Cotton (1990); Duke (1989); Freiberg, Prokosch, & Treister (1989); Gaddy (1988); Lasley & Wayson (1982); Levine & Lezotte (1990); Short (1988); Wang, Haertel, & Walberg (1995); and Wayson & Lasley (1984).

3 The numbering of listed items is for easy reference only and does not imply chronology or relative importance.

derly without being rigid, quiet without being oppressive, and generally conducive to the instructional business at hand" (22).

Immense research weight also supports certain classroom management and discipline practices as productive of safe and orderly classrooms and conducive to desirable student achievement.[4] These include:

1. Classroom rules and procedures that are specific and clearly explained at the beginning of the school year and periodically reinforced thereafter, especially with children in grades K-3
2. Beginning classes quickly and purposefully, with assignments, activities, materials and supplies ready for students when they arrive
3. Teachers circulating around the room during seatwork activities, keeping students on task and providing help as needed
4. Standards that are consistent or identical with the building code of conduct and that are applied consistently and equitably
5. Involvement of older children in establishing classroom standards and sanctions
6. Teaching and reinforcing positive, prosocial behaviors and skills, especially with students who have a history of behavior problems
7. Stopping disruptions quickly, taking care to avoid disrupting the entire class
8. Focusing on students' inappropriate behavior when taking disciplinary action—not on their personalities or histories

These practices obviously complement those associated with safe and orderly school-level environments and, as we shall see, interact and even converge with other key variables, such as supportive classroom environments, maximum learning time, and monitoring student progress.

4 Key resources supporting these classroom-level practices include Anderson, Evertson, & Emmer (1980); Brophy & Good (1986); Cotton (1990); Doyle (1986); Emmer & Evertson (1981); Evertson & Harris (1992); Fraser (1998); Gettinger (1988); Heins (1996); Johns & Espinoza (1996); and Solomon, et al. (1988).

BEST COPY AVAILABLE

Strong Administrative Leadership

Schools with desirable levels of student achievement are consistently shown by research to have "strong administrative leadership." The principal's visibility/accessibility identified as a key feature of safe and orderly school environments is also identified by researchers as a typical characteristic of strong, effective leaders. Other general findings about the leadership characteristics positively related to student performance include:[5]

1. Holding and communicating a clear vision of the school's educational purposes and standards—both within the school and with parents and other community members
2. Monitoring teacher and student performance and rewarding good work
3. Sharing decision-making responsibility with teachers
4. Assuring that student performance data are used in developing improvement plans
5. Providing resources for staff development

Not surprisingly, many of the aspects of strong administrative leadership have to do with the principal's involvement with the instructional program. Whereas less successful leaders often attend chiefly or exclusively to the noninstructional aspects of school management, effective administrators are involved with student learning in the following ways:

1. They believe that all students can learn and that the school makes the difference between success and failure.
2. They know and can apply validated teaching and learning principles; they model effective teaching practices for staff as appropriate.
3. They are familiar with research on effective instruction, share it, and assure that it is reflected in instructional planning and delivery.
4. They earmark resources for the professional development of those who develop curriculum and provide instruction, and they take part in professional development activities.

5 Key findings on administrator characteristics positively related to student achievement come from Andrews & Soder (1987); Bamburg & Andrews (1991); Brookover & Lezotte (1979); De Bevoise (1984); Edmonds (1979); Hallinger, Bickman, & Davis (1996); Hallinger & Heck (1996); High & Achilles (1986); Leithwood & Montgomery (1985); and Walberg & Lane (1985).

5. They work with other staff to assure that the school's curriculum, instruction, and assessment are aligned.
6. They communicate the expectation that instructional programs will improve over time and routinely monitor the implementation of new practices.

As with many other effective practices, the presence of these management- and instruction-related functions has an even more positive effect on the achievement of minority and low-SES students than on that of students in general.

As key researchers such as Walberg and Lane (1985), Hallinger, Bickman, and Davis (1996), and Hallinger and Heck (1996) point out, the fact that these powerful administrator activities have an indirect effect on student performance in no way diminishes their importance. Their mediated effects are appropriate, for as Hallinger, Bickman, and Davis point out, "achieving results through others is the essence of managerial work" (545).

Finally, it is important to note that research has identified no single best approach or style for carrying out these leadership functions, and that administrators need not exhibit all of them in order to be effective in fostering high student performance.

Primary Focus on Learning

Strong leaders exhibit both a sustained focus on learning and the capacity for engaging others in doing so. And more than 20 years of school effectiveness research routinely identifies the presence or absence of a fundamental focus on learning as critical in determining effectiveness. The ways in which such a focus is expressed in effective schools include the following:[6]

1. Frequent emphasis at all-school gatherings and in classrooms that learning is the most important purpose of being in school

6 Some key resources in which these are identified include Andrews & Soder (1987); Bamburg & Andrews (1991); Beck & Murphy (1996); Brookover & Lezotte (1979); Brophy (1997); Edmonds (1979); Good & Brophy (1986); Purkey & Smith (1983); Sammons, Hillman, & Mortimore (1995); and Zigarelli (1996).

2. Schoolwide and classroom communication to students that staff hold high expectations for their achievement and believe in their ability to learn successfully
3. Staff time and attention devoted to the accomplishment of basic reading and mathematics objectives by all students
4. Staff assumption of responsibility for students' learning
5. The presence and visibility of mission statements, slogans, mottoes, and displays that emphasize the school's academic goals
6. Evaluation of all proposals for change in terms of their potential for enhancing student learning
7. A "norm of improvement"—a shared belief in continuous effort to improve the instructional program

In addition, it is easy to see that maximizing learning time and close monitoring of student progress—critical practices in their own right—are logical manifestations of a primary focus on student learning.

Maximizing Learning Time

Researchers tell us that schools differ enormously in how much time their students spend engaged in appropriately challenging learning activities (Honzay, 1986-87; Karweit, 1984). First, schools differ in the amount of time they allocate to classroom learning activities. Second, teachers differ in both their subject matter time allotments and in the amounts of potential learning time that are lost to procedural and disciplinary matters, transitions, dead time, or off-task activities. Third, even a student who is engaged in a learning task may be making his way through drill-and-practice worksheets that are too easy for him, rather than experiencing true "academic learning time"—time spent engaging in tasks at an appropriate level of difficulty.

Practices aimed at maximizing learning time intersect with several other effective schooling attributes. Maintaining a safe and orderly environment is obviously essential for students to spend their time learning, for example, and protecting learning time is a commonly observed practice of effective administrators. And one way of viewing the critical instruc-

tional practices identified is that they make the best use of the learning time available. The following practices contribute to maximizing learning time:[7]

At the schoolwide level:

1. Allocating time for various subjects based on school and district goals and utilizing alternative scheduling practices (e.g., block scheduling) to ensure adequate time allocations for core subjects
2. Establishing and enforcing policies regarding tardies, absenteeism, and appropriate classroom behavior
3. Providing learning time and help outside of regular schools hours for students who need it
4. Reviewing potential new programs and activities in terms of their likely impact on learning time
5. Keeping loudspeaker announcements and other administrative intrusions brief
6. Ensuring that the school day, classes, and other activities start and end on time
7. Holding inservice activities as needed to improve staff skills in managing classrooms and increasing student time-on-task

In the classroom:

1. Beginning and ending lessons on time and keeping transition times short
2. Setting and maintaining a brisk instructional pace, keeping digressions to a minimum
3. Presenting learning activities at an appropriate level of difficulty for the majority of students, making adaptations to serve the needs of faster and slower learners
4. Maintaining awareness of the rest of the class when working with individuals and small groups

7 Identified in Anderson (1981); Brophy (1986b); Canady & Rettig (1995); Cotton (1989b); Fisher & Berliner (1985); Fisher, et al. (1980); Hossler, Stage, & Gallagher (1988); Karweit (1984); Levine & Lezotte (1995); Martens & Kelly (1993); Orchard (1996); and Stallings (1980).

BEST COPY AVAILABLE

5. Keeping seatwork activities productive through active supervision and provision of assistance to students in a way that others are not disturbed
6. Working with slower learners to reduce the amount of time needed for learning, e.g., by teaching them validated study skills and learning strategies
7. Assigning homework to elementary students above grade 3, with longer (45- to 120-minute) assignments to secondary students

Monitoring Student Progress

Scheduling and other time-related decisions are made partly on the basis of students' needs, and those needs, in turn, are determined through monitoring their learning progress. The kinds of monitoring efforts that characterize effective schools and classrooms include the following:[8]

1. Collecting and reviewing student performance data to ensure early identification and support for students with learning difficulties
2. Establishing and using procedures for collecting, summarizing, and reporting student achievement information; using aggregated data to determine overall performance and trends; and disaggregating data to review the performance of specific student groups
3. Reviewing test results, grade reports, attendance records, and other materials to identify problems and taking action based on findings
4. Reviewing assessment instruments and methods for their suitability to the students being evaluated, and making changes as needed, e.g., for students whose native language is not English
5. Making summaries of student performance available to all staff for their use in planning; making periodic reports to parents and community members
6. Using assessment methods beyond standardized achievement tests (e.g., performance assessments, portfolios) to enrich their understanding of students' progress

8 See Block & Burns (1976); Blum & Butler (1985); Brophy & Good (1986); Cawelti (1987); Cohen (1987); Edmonds & Frederiksen (1979); Guskey (1994); Herman (1992); Krug (1992); Levine & Lezotte (1995); O'Conner (1995); Porter & Brophy (1988); and Walberg, Paschal, & Weinstein (1985).

7. Aligning classroom assessments of student performance with the written curriculum and actual instruction
8. Routinely checking students' understanding by conducting recitations, checking students' work during seatwork periods, assigning and checking homework, administering quizzes, and reviewing student performance data

Academically Heterogeneous Class Assignments

Whether to assign students to classes on the basis of test scores and past academic performance (tracking) or to assign them either randomly or in deliberately heterogeneous arrangements is a controversial matter (Oakes, et al., 1997; Loveless, 1998; Grossen, 1996)—and one that I will not attempt to analyze in this short paper. Suffice it to say that the controversy has less to do with the achievement benefits of different arrangements than with political and logistical issues. One of these is "the deeply held beliefs of colleagues, parents, and students about intelligence and privilege that legitimize tracking, especially in racially and socioeconomically mixed schools" (Oakes, et al., 1997, 482). Consult the article by Oakes and others as well as Donelan, Neal, and Jones (1994) for recent discussions of this controversy.

Another reason behind resistance to heterogeneous grouping is that implementing and managing cooperative and other kinds of student work groups in heterogeneous settings is very challenging for teachers (Levine and Levine, 1999a, 3). Many teachers have not had the opportunity to develop the skills for orchestrating such groups, so success is likely to depend on providing them with assistance.

From a research perspective, recognizing and counteracting resistance to heterogeneous grouping is well worth the effort: Research supports both heterogeneous class assignments and part-time homogeneous grouping as one component of a flexible in-class grouping strategy. And, like other effective practices, these practices benefit ethnic/racial minority students and low-SES students even more than they benefit students in general.

BEST COPY AVAILABLE

Looking first at between-class academic tracking,[9] most research tells us that while there may be some academic benefit for extremely high-performing students placed in homogeneous tracks (Kulik, 1993), most students experience no academic benefit from this arrangement, and students classified as middle or low ability suffer in terms of their self-esteem, learning motivation, and general school satisfaction. Since poor and minority students are overrepresented in low-ability tracks and special education placements, and since most schools continue to be tracked despite the findings from research, it is no wonder that tracking continues to be a serious social as well as educational issue.

Flexible In-Class Grouping

Turning to the subject of in-class grouping, researchers have identified many practices that can be effective—practices that are not necessarily mutually exclusive. These include:[10]

1. Using whole group instruction when introducing new concepts and skills
2. Forming smaller, short-term groups as needed to reinforce learning and address individual achievement levels
3. Reviewing and adjusting groups often, moving students as achievement levels change, avoiding underplacement, and involving other teachers and aides in making placement decisions wherever possible
4. Providing in-class instruction in small groups for low achievers, avoiding pull-out classes whenever possible
5. Delivering high-quality instruction to students in lower-ability groups—varied learning materials and activities, enthusiastic teacher behavior, opportunities to respond to higher-order questions, etc.
6. Using heterogeneous cooperative learning groups for some learning activities

---

9 Research sources regarding between-class academic tracking include Donelan, Neal, & Jones (1994); Fuligni, Eccles, & Barber (1995); Gamoran (1992); Kulik (1993); Noland & Taylor (1986); Oakes (1985); Oakes, et al. (1997); Schneider (1989); and Slavin (1987b, 1988a).

10 These are identified in the work of Brandt & Ellsworth (1996); Calfee & Brown (1979); Davidson (1985); Johnson, Johnson, & Scott (1978); Johnson, et al. (1981); Lazarowitz, et al. (1988); Lou, Abrami, & Spence (1996); McManus & Gettinger (1996); Peterson, Wilkinson, & Hallinan (1984); Slavin (1995, 1988a, 1987a, 1996); and Slavin & Karweit (1985).

7. Composing cooperative learning groups that represent not only different ability levels, but also both genders, different ethnic/racial backgrounds and socioeconomic strata, etc., since research shows that learning in such arrangements enhances intergroup relations
8. Structuring cooperative learning groups so that there are both group rewards and individual accountability
9. Making use of peer tutoring and peer evaluation groups to provide students feedback and support on their work
10. Holding inservice activities to refine teachers' and aides' skills in managing cooperative and other small learning groups

To elaborate on this last point, real-life examples of assistance to staff include providing a roving facilitator to assist classroom teachers, providing qualified staff in addition to classroom teachers so that learning groups for lower-performing students can be kept small, and supplying teachers with specific guidelines and procedures for student assessment and implementation of learning groups (Levine and Levine, 1999b, 6).

Practices identified in this section interact with several other critical effective schooling components. Small group work and tutoring maximize learning time, for example, and frequent review of group composition is one way that teachers and aides monitor their students' progress. In addition, the social benefits of heterogeneous cooperative group learning contribute to a positive classroom climate.

Small Class Size

Because operating small classes is more expensive than running large ones, the prospect of reducing class size is a perennially controversial topic. Research findings about the benefits of smaller classes for young children indicate, however, that reducing their size would be well worth the extra costs involved. Some major findings include:[11]

11 These are drawn from the work of Achilles (1997); Bingham (1994); Bourke (1986); Finn (1998); Glass & Smith (1978); Hanushek (1998); Illig (1997); Kramer (1997); Mosteller (1995); Polansky & Johnson (1996); Robinson (1990); Robinson & Wittebols (1986); U.S. Department of Education (1998); and Wenglinsky (1997, 1998).

1. Smaller classes significantly promote achievement in grades K-3, and the effects are greater for minority and poor children than for children in general.
2. These effects occur when class size is reduced to between 15 and 20 students.
3. When class sizes are reduced from significantly more than 20 students to fewer than 20, average students gain approximately 10 percentile points; poor and minority students gain more.
4. While reducing class size does not guarantee that teachers will use more effective schooling practices, teachers of smaller classes do tend to use more of these practices, e.g., a greater variety of instructional techniques and more individual attention to students.
5. K-3 students in smaller classes exhibit more positive attitudes and classroom behavior than those in larger classes.

6. Fewer children educated in smaller classes in grades K-3 are retained in grade.
7. Children educated in smaller classes in grades K-3 continue to outperform their counterparts from larger classes after the two groups move into the higher grades.
8. The achievement benefits of smaller classes are significantly less for children above grade 3, but smaller classes improve the quality of the classroom environment for these students.
9. For students performing below grade level in classes in which they predominate, research supports the combined use of individual tutoring and placement in classes no larger than 15 students.
10. Class size is not pupil/teacher ratio; that is, the presence of a teacher and an aide in a class of approximately 30 students does not typically produce the positive results we see in a class with 15 students and one teacher.

While the act of reducing class size may produce some benefits in and of itself, it has far greater potential to do so when combined with other effective practices. In particular, smaller classes are associated with more positive classroom environ-

ment and increase students' involvement with the critical instructional practices described further along in this discussion.

Supportive Classroom Climate

Few would argue that a harsh or critical classroom environment is preferable to a supportive one in helping students to learn successfully. And as it so often does, research validates our common sense notion. Yet research also shows that teachers' behavior can sometimes feel disobliging to students without the teachers' knowing it or intending to produce that effect. In particular, research shows that students are very sensitive to teachers' attitudes and expectations as expressed in verbal and nonverbal ways—so much so that some students exhibit achievement and attitudes congruent with what they believe their teachers think of them and their abilities (Brophy, 1982; Bamburg, 1994).

Given the influence on student performance of teacher behavior and other variables, teachers are encouraged to make use of practices research has identified as productive of a supportive classroom climate. They include, first of all, those classroom-level practices that contribute to a safe and orderly environment (see p. 6). Others are:[12]

1. Communicating high expectations for student performance; letting students know that they are all believed capable of meeting basic objectives, and no one is expected to fail
2. Holding students accountable for completing assignments, turning in work, and participating in classroom discussions
3. Providing the time, instruction, and encouragement necessary to help lower achievers perform at acceptable levels; this includes giving them learning material and activities as interesting and varied as those provided for other students

12 Found in Agne, Greenwood, & Miller (1994); Angell (1991); Bamburg (1994); Brophy (1982); Cotton (1989c); Deiro (1997); Edmonds (1979); Evertson & Harris (1992); Fraser (1998); Galbo (1992); Good (1987); Gottfredson, Marciniak, & Birdseye (1995); Harwood (1992); Lloyd (1995); Pierce (1994); and Voelkl (1995).

4. Monitoring their own beliefs and behavior to make certain that high expectations are communicated to all students regardless of socioeconomic status, race, gender, or other personal characteristics
5. Avoiding unreliable sources of information about students' learning potential, such as single test scores or the biases of other teachers
6. Emphasizing that different students are good at different things and reinforcing this by having them view each other's products and performances
7. Paying attention to students' interests, problems, and accomplishments
8. Encouraging effort, focusing on the positive aspects of students' answers, products, and behavior
9. Communicating interest and caring to students, both verbally and through such nonverbal means as giving undivided attention, maintaining eye contact, smiling, and nodding
10. Sharing anecdotes and incidents from their personal experience and using humor as appropriate to built rapport with students
11. Recognizing students for achievement and improvement in academics and behavior
12. Using cooperative learning groups to enhance learning and improve intergroup relations
13. Exhibiting democratic leadership and encouraging students to express and defend their views on significant issues

While important at all times, a supportive classroom environment becomes especially critical when working with students to develop higher-order thinking skills. Developing such skills requires students to move out of their "comfort zone"—something they will be reluctant to do unless they feel safe to try out new ways of working with ideas and information. Teachers' communication of high expectations, warmth, and encouragement complements all other contextual variables and instructional practices.

BEST COPY AVAILABLE

Parent and Community Involvement

The active involvement of parents in their children's learning is obviously something over which the school has limited influence. Still, because parent involvement makes an enormous positive difference in children's school performance, I include the following validated practices for engaging and working with parents and community members:[13]

1. Conducting vigorous outreach activities, especially in culturally diverse school settings, to involve parent and community representatives from all cultural groups in the community
2. Developing written policies which acknowledge the importance of parent/community involvement and providing ongoing support to parent involvement efforts
3. Making special efforts to involve the parents of economically disadvantaged, racial/ethnic minority, and language minority students, who tend to be underrepresented among parents involved in the schools
4. Working with cultural minority parents and community members to help children cope with any differences in norms noted between the home and the school
5. Communicating repeatedly to parents that their involvement can greatly enhance their children's school performance, regardless of the parents' own level of education
6. Making parents of young children aware that the earlier they become involved in their child's education, the more it benefits his or her learning
7. Communicating to parents that students *of all ages* benefit from parent involvement
8. Encouraging parents of young children to read to them, every day if possible, and for at least 10 minutes at a time
9. Sending home to parents information about upcoming classroom activities, examples of students' work, and suggestions for at-home learning activities

13 Identified in Becher (1984); Cotton & Wikelund (1989); Griffith (1996); Henderson (1987); Henderson & Berla (1994); Keith, et al. (1996); Levine & Lezotte (1995); Paulson (1994); Sanders (1996); Sattes (1985); Tangri & Moles (1987); Watson, Brown, & Swick (1983); Williams & Chavkin (1989); and Yap & Enoki (1995).

10. Offering parents different parent involvement options to choose from, based on their schedules and interests, e.g., helping their children learn at home, helping out in the classroom, providing transportation for field trips, etc.
11. Involving community members in schoolwide and classroom activities, giving presentations, serving as information resources, serving as reader/responders for students' published writings, etc.
12. Encouraging parents to provide a suitable place with necessary materials for children to study at home and to monitor the homework habits of children at least through the elementary grades
13. Being mindful that parents are busy people with limited time, and refraining from asking them to devote unrealistic amounts of time to school-related activities
14. Publishing indicators of school quality and providing them to parents and community members periodically to foster communication and stimulate public action

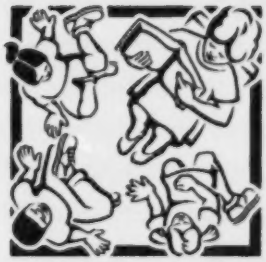
Instructional Attributes

As noted earlier, the instructional attributes most closely and positively related to student performance differ from the contextual attributes, in that they are much more specific. Their potency derives from being used in combination—so much so that it is somewhat artificial to treat them discretely. The following sections identify the component parts of each of five instructional practices: careful orientation to lessons, clear and focused instruction, effective questioning techniques, feedback and reinforcement, review and reteaching as needed. This brief treatment, while it cannot do justice to the complexity of instructing children effectively, does call attention to key instructional behaviors repeatedly noted by researchers.

Careful Orientation to Lessons

Researchers[14] find that effective teachers typically enhance the learning readiness of their students in the following ways:

1. Helping students get ready to learn by explaining lesson objectives in everyday language and referring to them periodically during the lesson to maintain focus
2. Posting or handing out learning objectives to help students keep a sense of direction and checking periodically to assure that students understand them
3. Explaining the relationship of the current lesson to previous learning, calling attention to key concepts or skills previously covered



4. Arousing students' interest and curiosity about the lesson content by relating it to things of personal relevance to them
5. Challenging and inspiring students to learn, particularly at the start of difficult lessons, and making sure they know what is expected and are ready to learn
6. Using strategies such as advance organizers, study questions, and prediction to prepare students for learning activities
7. Explaining to students that they are expected to contribute to classroom discussions and other participatory activities

14 Findings are identified in Block & Burns (1976); Brophy (1987); Brophy & Good (1986); Ellis & Worthington (1994); Good & Grouws (1979); Porter & Brophy (1988); Rosenshine (1986, 1995); Slavin (1994); Stahl & Clark (1987); and Stallings (1985).

Clear and Focused Instruction

Researchers[15] report that, having set the stage by means of these orientation practices, effective teachers carry out the following kinds of activities:

1. Reviewing lesson activities, giving clear written and verbal directions, emphasizing key points, and checking students' understanding
2. Giving lectures in plain language, augmenting them with demonstrations or diagrams as appropriate
3. Taking note of students' strengths and, when feasible, offering learning activities that capitalize on those strengths
4. Giving students plenty of opportunity for guided and independent practice with new concepts and skills
5. Instructing students in strategies for learning and for remembering/applying what they have learned—note taking, mnemonics, cognitive mapping, study skills, test-taking skills, etc.

Effective Questioning Techniques

I have not usually seen the matter of effective classroom questioning receive attention as a key instructional attribute, but I believe its importance warrants doing so. For one thing, researchers tell us that recitation—a major form of questioning—is second only to lecturing in popularity as a teaching method and typically consumes anywhere from 35 to 50 percent of classroom instructional time. For another, research identifies a close relationship between effective classroom questioning and student test performance. Finally, as assessment experts routinely remind us, good instruction includes assessment components, and vice versa; and teachers' classroom questioning is a common intersection of these functions.

Elements of effective teacher questioning include the following:[16]

1. Asking questions that engage student interaction and enable them to monitor student understanding

---

15 Brophy (1979); Brophy & Good (1986); Corno & Snow (1986); Fraenkel (1995); Haller, Child, & Walberg (1988); Madden, et al. (1993); Metcalf & Cruickshank (1991); Rosenshine (1976); Rosenshine & Stevens (1986); Slavin (1994); Snyder, et al. (1991); and Weade & Evertson (1988).

16 These elements are identified in Atwood & Wilen (1991); Barnette, et al. (1995); Brophy (1986b); Cotton (1989a); Gall (1984); Johnston, Markle, & Haley-Oliphant (1987); Makin (1996); Mansfield (1996); Rosenshine (1995); Swift & Gooding (1983); and Tobin (1987).

2. Structuring questions so as to focus students' attention on key elements in the lesson
3. Posing questions at the beginning of lessons or reading assignments for students to consider as they read or listen to new material
4. Asking a combination of lower-cognitive (fact and recall) and higher-cognitive (open-ended and interpretive) questions to check students' understanding and stimulate their thinking
5. Asking lower-cognitive questions that most students will be able to answer correctly when helping students to acquire and reinforce factual knowledge
6. Asking a majority of higher-cognitive questions of students above the primary grades during classroom discussions
7. Allowing generous amounts of "wait-time" when questioning students—at least three seconds for lower-cognitive questions and more for higher-cognitive ones
8. Using strategies such as probing, redirection, and reinforcement with students whose initial responses are inaccurate or incomplete, thereby improving their understanding and communicating confidence in their ability to work through complex issues
9. Assuring that both faster and slower learners have opportunities to respond to higher-cognitive questions and are given sufficient wait-time

Feedback and Reinforcement

Some investigations have found instructional reinforcement to have the most powerful positive effect on student achievement of all indicators of instructional quality (Walberg, 1984). And research in general[17] supports the practice of letting students know how they are doing and corroborating their accurate responses—in classroom recitations, on homework assignments, as part of instructional software programs, and so forth. Frequently cited practices include:

17 Representative research on the effects of feedback and reinforcement includes Azevedo & Bernard (1995); Brophy & Good (1986); Butler & Nisan (1986); DiPardo & Freedman (1988); Kulik & Kulik (1991, 1988); Leach & Byrne (1986); Lysakowski & Walberg (1981); McCarthy, Webb, & Hancock (1995); Rosenshine & Stevens (1986); Schunk (1984); and Walberg (1984).

BEST COPY AVAILABLE

1. Giving students immediate feedback on their in-class responses and written assignments to help them understand and correct errors
2. Acknowledging correct responses as such during recitations and on assignments and tests
3. Relating the feedback they provide to unit goals or overall course goals
4. Giving praise and other verbal reinforcements for correct answers and for progress in relation to past performance; however, effective praise is that which is used sparingly and neither randomly nor when unmerited
5. Making use of peer evaluation techniques (e.g., for written composition assignments) as a means of providing feedback and guidance for students
6. Providing computer-assisted instructional activities that give students feedback and reinforcement regarding their learning performance
7. Assigning homework regularly to students in grade four and above, and see that it is corrected and returned promptly—either in class by the students or by the teacher (Researchers find that students respond better to such feedback if day-to-day homework is not graded.)
8. Training students to provide each other feedback and reinforcement during peer tutoring activities

Review/ Reteaching as Needed

Finally, researchers have identified review of learning material as an instructional practice benefiting all students, and reteaching as critically important for those who require more time and exposure in order to master learning material.[18] Validated approaches for review and reteaching include:

1. Reviewing/reteaching key concepts prior to introducing new learning material at the beginning of the year or course

18 See Bain, Lintz, & Word (1989); Block & Burns (1976); Block, Efthim, & Burns (1989); Brophy (1986b); Dalton & Hannafin (1988); Dewalt & Rodwell (1988); Dillashaw & Okey (1983); Fuchs, Fuchs, & Tindal (1986); Guskey & Gates (1986); Levine (1985); Rosenshine (1995); and Rosenshine & Stevens (1986).

2. Providing regular, focused reviews of key concepts and skills throughout the school year to check on and strengthen student learning
3. Selecting computer-assisted instructional activities that include review and reteaching components
4. Using different materials and strategies for reteaching than those used for initial instruction, rather than merely providing a "rehash" of previously taught lessons
5. Developing reteaching approaches that capitalize on students' learning strengths as well as those that address their weaknesses
6. Continuing to reteach priority lesson content until students show that they have learned it

Conclusion

Returning to the question posed in the introduction—What combination of schooling conditions and practices holds the greatest promise for improving student learning?—I believe we have some strong candidates for answers. The areas of practice identified here rest on considerable research weight, are entirely or partially school controllable, and most—though not all—can be implemented without significant new expenditures. We clearly owe it to educators and the public to share what we know about the relative effectiveness of possible arrangements and practices, and I trust that this paper helps to define and impart that knowledge.

Bibliography

Achilles, C.M. (1997). Small classes, big possibilities. *The School Administrator, 54*(9), 6, 12-13, 15.

Agne, K.J., Greenwood, G.E., & Miller, L.D. (1994). Relationships between teacher belief systems and teacher effectiveness. *The Journal of Research and Development in Education, 27*, 141-152.

Anderson, L.M., Evertson, C.M., & Emmer, E. (1980). Dimensions in classroom management derived from recent research. *Journal of Curriculum Studies, 12*, 343-362.

Anderson, L.W. (1981). Instruction and time on task: A review. *Journal of Curriculum Studies, 13*, 289-303.

Andrews, R.L., & Soder, R. (1987). Principal leadership and student achievement. *Educational Leadership, 44*(6), 9-11.

Angell, A.V. (1991). Democratic climates in elementary classrooms: A review of theory and research. *Theory and Research in Social Education, 19*, 241-266.

Atwood, V.A., & Wilen, W.W. (1991). Wait time and effective social studies instruction: What can research in science education tell us? *Social Education, 55*, 179-181.

Azevedo, R., & Bernard, R.M. (1995, April). *The effects of computer-presented feedback on learning from computer-based instruction: A meta-analysis.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 385 235)

Bain, H., Lintz, M., & Word, E. (1989). *A study of first grade effective teaching practices from the Project STAR class-size research. A study of fifty effective teachers whose class average gain scores ranked in the top 15% of each of four school types in Project STAR.* Unpublished manuscript. (ERIC Document Reproduction Service No. ED 321 887)

Bamburg, J.D. (1994). *Raising expectations to improve student learning.* Oak Brook, IL: North Central Regional Educational Laboratory. (ERIC Document Reproduction Service No. ED 378 290)

Bamburg, J.D., & Andrews, R.L. (1991). School goals, principals, and achievement. *School Effectiveness and School Improvement, 2*, 175-191.

Barnette, J.J., Orletsky, S., Sattes, B., & Walsh, J. (1995, April). *Wait-time: Effective and trainable.* Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 383 706)

Becher, R.M. (1984). *Parent involvement: A review of research and principles of successful practice.* Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. (ERIC Document Reproduction Service No. ED 247 032)

Beck, L.G., & Murphy, J. (1996). *The four imperatives of a successful school.* Thousand Oaks, CA: Corwin Press.

Bekuis, T. (1995, March). *Unsafe public schools and the risk of dropping out: A longitudinal study of adolescents.* Paper presented at the annual meeting of the Eastern Psychological Association, Boston, MA. (ERIC Document Reproduction Service No. ED 388 907)

Bingham, C.S. (1994, February). *Class size as an early intervention strategy in white-minority achievement gap reduction.* Paper presented at the annual meeting of the American Association of School Administrators, San Francisco, CA. (ERIC Document Reproduction Service No. ED 368 077)

Block, J.H., & Burns, R.B. (1976). Mastery learning. In L.S. Schulman (Ed.), *Review of research in education: Vol. 4* (pp. 3-49). Itasca, IL: F.E. Peacock.

Block, J.H., Efthim, H.E., & Burns, R.B. (1989). *Building effective mastery learning schools.* New York: Longman.

Blum, R.E., & Butler, J.A. (1985). Managing improvement by profiling. *Educational Leadership, 42*(6), 54-58.

Bourke, S. (1986). How smaller is better: Some relationships between class size, teaching practices, and student achievement. *American Educational Research Journal, 23*, 558-571.

Brandt, F.J., & Ellsworth, N.J. (1996). Effects of cooperative learning on the academic achievement and self-esteem of urban adolescents with learning disabilities. *Learning Disabilities: A Multidisciplinary Journal, 7*, 9-13.

Brookover, W.B., & Lezotte, L.W. (1979). *Changes in school characteristics coincident with changes in student achievement* (Occasional Paper No. 17). East Lansing, MI: Michigan State University, Institute for Research on Teaching. (ERIC Document Reproduction Service No. ED 181 005)

Brophy, J.E. (1979). *Teacher behavior and its effects.* (Occasional Paper No. 25). East Lansing, MI: Michigan State University, Institute for Research on Teaching. (ERIC Document Reproduction Service No. ED 181 014)

Brophy, J.E. (1982). *Research on the self-fulfilling prophecy and teacher expectations.* East Lansing, MI: Michigan State University, Institute for Research on Teaching. (ERIC Document Reproduction Service No. ED 221 530)

Brophy, J.E. (1986a). Classroom management techniques. *Education and Urban Society, 18*, 182-194.

Brophy, J.E. (1986b). Teacher influences on student achievement. *American Psychologist, 4*, 1069-1077.

Brophy, J.E. (1987). Synthesis of research on strategies for motivating students to learn. *Educational Leadership, 45*(2), 40-48.

Brophy, J.E. (1997). Effective instruction. In H.J. Walberg & G.D. Haertel (Eds.), *Psychology and educational practice* (pp. 212-232). Berkeley, CA: McCutchan.

Brophy, J.E., & Good, T.L. (1986). Teacher behavior and student achievement. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 328-375). New York: Macmillan.

Butler, R., & Nisan, M. (1986). Effects of no feedback, task-related comments, and grades on intrinsic motivation and performance. *Journal of Educational Psychology, 78*, 210-216.

Calfee, R., & Brown, R. (1979). Grouping students for instruction. In D.L. Duke (Ed.), *Classroom management: The seventy-eighth yearbook of the National Society for the Study of Education* (pp. 144-181). Chicago: University of Chicago Press.

Canady, R.L., & Rettig, M.D. (1995). The power of innovative scheduling. *Educational Leadership, 53*(3), 4-10.

Cawelti, G. (1987, February). *How effective instructional leaders get results.* Paper presented at the annual meeting of the American Association of School Administrators, New Orleans, LA. (ERIC Document Reproduction Service No. ED 328 935)

Cohen, S.A. (1987). Instructional alignment: Searching for a magic bullet. *Educational Researcher, 16*(8), 16-20.

Corno, L., & Snow, R.E. (1986). Adapting teaching to individual differences among learners. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 605-629). New York: Macmillan.

Cotton, K. (1989a). *Classroom questioning* (Close-up No. 5). Portland, OR: Northwest Regional Educational Laboratory. (ERIC Document Reproduction Service No. ED 312 030)

Cotton, K. (1989b). *Educational time factors.* (Close-up No. 8). Portland, OR: Northwest Regional Educational Laboratory.

Cotton, K. (1989c). *Expectations and student outcomes* (Close-up No. 7). Portland, OR: Northwest Regional Educational Laboratory.

Cotton, K. (1988). *Instructional reinforcement* (Close-up No. 3). Portland, OR: Northwest Regional Educational Laboratory.

Cotton, K. (1999). *Research you can use to improve results*. Alexandria, VA: Association for supervision and Curriculum Development.

Cotton, K. (1990). *Schoolwide and classroom discipline* (Close-up No. 9). Portland, OR: Northwest Regional Educational Laboratory.

Cotton, K., & Wikelund, K.R. (1989). *Parent involvement in education* (Close-up No. 6). Portland, OR: Northwest Regional Educational Laboratory. (ERIC Document Reproduction Service No. ED 312 030)

Dalton, D.W., & Hannafin, M.J. (1988). The effects of computer-assisted and traditional mastery methods on computation accuracy and attitudes. *Journal of Educational Research, 82,* 27-33.

Davidson, N. (1985). Small-group learning and teaching in mathematics: A selective review of the research. In R.E. Slavin, S. Sharan, S. Kagan, R. Hertz-Lazarowitz, C. Webb, & R. Schmuck (Eds.), *Learning to cooperate, cooperating to learn* (pp. 211-230). New York: Plenum.

De Bevoise, W. (1984). Synthesis of research on the principal as instructional leader. *Educational Leadership, 41*(5), 14-20.

Deiro, J. (1997). Teacher strategies for nurturing healthy connections with students. *Journal for a Just and Caring Education, 3,* 192-202.

Dewalt, M.W., & Rodwell, F.G. (1988). Effects of increased learning time in remedial math and science. *ERS Spectrum, 6*(1), 33-36.

Dillashaw, F.G., & Okey, J.R. (1983). Effects of a modified mastery learning strategy on achievement, attitudes, and on-task behavior of high school chemistry students. *Journal of Research in Science Teaching, 20,* 203-211.

DiPardo, A., & Freedman, S.W. (1988). Peer response groups in the writing classroom: Theoretic foundations and new directions. *Review of Educational Research, 58,* 119-149.

Donelan, R.W., Neal, G.A., & Jones, D.L. (1994). The promise of Brown and the reality of academic grouping: The tracks of my tears. *Journal of Negro Education, 63,* 376-387.

Doyle, W. (1986). Classroom organization and management. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 392-431). New York: Macmillan.

Duke, D.L. (1989). School organization, leadership, and student behavior. In O.C. Moles (Ed.), *Strategies to reduce student misbehavior* (pp. 31-62). Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. ED 311 608)

Edmonds, R.R. (1979). Effective schools for the urban poor. *Educational Leadership, 37*(1), 15-18, 20-24.

Edmonds, R.R., & Frederiksen, J.R. (1979). *Search for effective schools: The identification and analysis of city schools that are instructionally effective for poor children.* Unpublished manuscript. (ERIC Document Reproduction Service No. ED 170 396)

Ellis, E.S., & Worthington, L.A. (1994). *Research synthesis on effective teaching principles and the design of quality tools for educators* (Tech. Rep. No. 5). Eugene, OR: University of Oregon, National Center to Improve the Tools of Educators. (ERIC Document Reproduction Service No. ED 386 853)

Emmer, E.T., & Evertson, C.M. (1981). Synthesis of research on classroom management. *Educational Leadership, 38*(4), 342-343, 345-347.

Evertson, C.M., & Harris, A.H. (1992). What we know about managing classrooms. *Educational Leadership, 49*(7), 74-78.

Finn, J.D. (1998). *Class size and students at risk: What is known? What is next?* Washington, DC: National Institute on the Education of At-Risk Students. (ERIC Document Reproduction Service No. ED 418 208)

Fisher, C.W., & Berliner, D.C. (Eds.). (1985). *Perspectives on instructional time.* New York: Longman.

Fisher, C.W., et al. (1980). Teaching behaviors, academic learning time, and student achievement: An overview. In C. Denham & A. Lieberman (Eds.), *Time to learn* (pp. 7-32). Washington, DC: U.S. Department of Education.

Fraenkel, J.R. (1995, April). *Characteristics and behaviors of effective social studies teachers in selected countries.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 388 543)

Fraser, B.J. (1998). Classroom environment instruments: Development, validity and applications. *Learning Environments Research, 1,* 7-33.

Freiberg, H.J., Prokosch, N., & Treister, E.S. (1989). Turning around at-risk schools through consistency management. *Journal of Negro Education, 58,* 372-382.

Fuchs, L.S., Fuchs, D., & Tindal, G. (1986). Effects of mastery learning procedures on student achievement. *Journal of Educational Research, 79,* 286-291.

Fuligni, A.J., Eccles, J.S., & Barber, B.L. (1995). The long-term effects of seventh-grade ability grouping in mathematics. *Journal of Early Adolescence, 15,* 58-89.

Gaddy, G.D. (1988). High school order and academic achievement. *American Journal of Education, 96,* 496-518.

Galbo, J.J. (1992). Social relationships and academic achievement: A selective literature review with implications for teacher education. *Teacher Education Quarterly, 19*(4), 59-81.

Gall, M.D. (1984). Synthesis of research on teachers' questioning. *Educational Leadership, 42*(3), 40-47.

Gamoran, A. (1992). Is ability grouping equitable? *Educational Leadership, 50*(2), 11-17.

Gettinger, M. (1988). Methods of proactive classroom management. *School Psychology Review, 17,* 227-242.

Glass, G.V., & Smith, M.L. (1978). *Meta-analysis of research on the relationship of class-size and achievement: The class size and instruction project.* San Francisco: Far West Laboratory for Educational Research and Development. (ERIC Document Reproduction Service No. ED 168 129)

Good, T.L. (1987). Two decades of research on teacher expectations: Findings and future directions. *Journal of Teacher Education, 38*(4), 32-47.

Good, T.L., & Brophy, J.E. (1986). School effects. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 570-602). New York: Macmillan.

Good, T.L., & Grouws, D.A. (1979). The Missouri mathematics effectiveness project: An experimental study in fourth-grade classrooms. *Journal of Educational Psychology, 71,* 355-362.

Gottfredson, D.C., Marciniak, E.M., & Birdseye, A.T. (1995). Increasing teacher expectations for student achievement. *Journal of Educational Research, 88,* 155-163.

Griffith, J. (1996). Relation of parental involvement, empowerment, and school traits to student academic performance. *Journal of Educational Research, 90,* 33-41.

Grossen, B. (1996). *How should we group to achieve excellence with equity?* Eugene, OR: University of Oregon. Retrieved October 12, 1999 from the World Wide Web: http://darkwing.uoregon.edu/~adiep/grp.htm.

Guskey, T.R. (1994). Making the grade: What benefits students? *Educational Leadership, 52*(2), 14-20.

Guskey, T.R., & Gates, S.L. (1986). Synthesis of research on the effects of mastery learning in elementary and secondary classrooms. *Educational Leadership, 43*(8), 73-80.

Haller, E.J. (1992). High school size and student indiscipline: Another aspect of the school consolidation issue? *Educational Evaluation and Policy Analysis, 14,* 145-156.

Haller, E.P., Child, D.A., & Walberg, H.J. (1988). Can comprehension be taught? A quantitative synthesis of 'metacognitive' studies. *Educational Researcher, 17*(9), 5-8.

Hallinger, P., Bickman, L., & Davis, K. (1996). School context, principal leadership, and student reading achievement. *Elementary School Journal, 96,* 527-549.

Hallinger, P., & Heck, R.H. (1996). Reassessing the principal's role in school effectiveness. *Educational Administration Quarterly, 32,* 5-44.

Hanushek, E.A. (1998). *The evidence on class size.* Rochester, NY: University of Rochester, W. Allen Wallis Institute of Political Economy. Retrieved October 12, 1999 from the World Wide Web: http://petty.econ.rochester.edu/eah.htm

Harwood, A.M. (1992). Classroom climate and civic education in secondary social studies research: Antecedents and findings. *Theory and Research in Social Education, 20,* 47-86.

Heins, T. (1996). Presenting rules to young children at school. *Australian Journal of Early Childhood, 21*(2), 7-11.

Henderson, A.T. (Ed.). (1987). *The evidence continues to grow: Parent involvement improves student achievement: An annotated bibliography.* Columbia, MD: National Committee for Citizens in Education. (ERIC Document Reproduction Service No. ED 315 199)

Henderson, A.T., & Berla, N. (Eds.). (1994). *A new generation of evidence: The family is critical to student achievement.* Washington, DC: National Committee for Citizens in Education. (ERIC Document Reproduction Service No. ED 375 968)

Herman, J.L. (1992). What research tells us about good assessment. *Educational Leadership, 49*(8), 74-78.

High, R.M., & Achilles, C.M. (1986, April). *Principal influence in instructionally effective schools.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 277 115)

Honzay, A. (1986-87). More is not necessarily better. *Educational Research Quartely, 11,* 2-6.

Hossler, C., Stage, F., & Gallagher, K. (1988). The relationship of increased instructional time to student achievement (Policy Bulletin No. 1). Bloomington, IN: Consortium on Educational Policy Studies. (ERIC Document Reproduction Service No. ED 298 671)

Illig, D.C. (1997). *Reducing class size: A review of the literature and options for consideration.* Sacramento, CA: California State Library. (ERIC Document Reproduction Service No. ED 407 699)

Johns, K.M., & Espinoza, C. (1996). *Management strategies for culturally diverse classrooms* (Fastback No. 396). Bloomington, IN: Phi Delta Kappa. (ERIC Document Reproduction Service No. ED 406 369)

Johnson, D.W., Johnson, R.T., & Scott, L. (1978). The effects of cooerative and individualized instruction on students' attitudes and achievement. *Journal of School Psychology, 104,* 207-216.

Johnson, D.W., Maruyama, G., Johnson, R., Nelson, D., & Skon, L. (1981). Effects of cooperative, competitive, and individualistic goal structures on achievement: A meta-analysis. *Psychological Bulletin, 89,* 47-62.

Johnston, J.D., Markle, G.C., & Haley-Oliphant, A. (1987). What research says about questioning in the classroom: Questions about questions are difficult to answer. *Middle School Journal, 18*(4), 9-33.

Karweit, N. (1984). Time-on-task reconsidered: Synthesis of research on time and learning. *Educational Leadership, 41*(8), 32-35.

Keith, T.Z., Keith, P.B., Quirk, K.J., Cohen-Rosenthal, E., & Franzese, B. (1996). Effects of parental involvement on achievement for students who attend school in rural America. *Journal of Research in Rural Education, 12,* 55-67.

Kramer, S.L. (1997). What we know about block scheduling and its effects on math instruction, Part I. *NASSP Bulletin, 81,* 18-42.

Krug, S.E. (1992). *Instructional leadership, school instructional climate, and student learning outcomes* [Project report]. Urbana, IL: National Center for School Leadership. (ERIC Document Reproduction Service No. ED 359 668)

Kulik, C.C., & Kulik, J.A. (1991). Effectiveness of computer-based instruction: An updated analysis. *Computers in Human Behavior, 7,* 75-94.

Kulik, J.A. (1993). *An analysis of the research on ability grouping.* Storrs, CT: National Research Center on the Gifted and Talented. (ERIC Document Reproduction Service No. ED 367 095)

Kulik, J.A., & Kulik, C.C. (1988). Timing of feedback and verbal learning. *Review of Educational Research, 58,* 79-97.

Lasley, T.J., & Wayson, W.W. (1982). Characteristics of schools with good discipline. *Educational Leadership, 40*(3), 28-31.

Lazarowitz, R., Hertz, R.L., Baird, J.H., & Bowlden, V. (1988). Academic achievement and on-task behavior of high school biology students instructed in a cooperative small investigative group. *Science Education, 72,* 475-487.

Leach, D.J., & Byrne, M.K. (1986). Some 'spill-over' effects of a home-based reinforcement programme in a secondary school. *Educational Psychology, 6,* 265-276.

Leithwood, K.A., & Montgomery, D.J. (1985). The role of the principal in school improvement. In G.R. Austin & H. Garber (Eds.), *Research on exemplary schools* (pp. 155-177). Orlando, FL: Academic Press.

Levine, D.U. (1985). *Improving student achievement through mastery learning programs.* San Francisco: Jossey-Bass.

Levine, D.U., & Levine, R.F. (1999a). *Considerations in introducing instructional interventions.* Bloomington, IN: Phi Delta Kappa National Center for Effective Schools. Retrieved October 12, 1999 from the World Wide Web: http://www.pdkintl.org/profdev/nces/feature1.htm

Levine, D.U., & Levine, R.F. (1999b). *Two routes to unusual effectiveness: Dealing with doability and other correlates in the effective schools process.* Bloomington, IN: Phi Delta Kappa National Center for Effective Schools. Retrieved October 12, 1999 from the World Wide Web: http://www.pdkintl.org/profdev/nces/feature2.htm

Levine, D.U., & Lezotte, L.W. (1995). Effective schools research. In J.A. Banks & C.A.M. Banks, *Handbook of research on multicultural education* (pp. 525-547). New York: Macmillan.

Levine, D.U., & Lezotte, L.W. (1990). *Unusually effective schools: A review and analysis of research and practice.* Madison, WI: The National Center for Effective Schools Research and Development. (ERIC Document Reproduction Service No. ED 330 032)

Lloyd, S.R. (1995, April). *Teacher traits students find helpful or bothersome: Implications for the inclusive classroom.* Paper presented at the annual international convention of the Council for Exceptional Children, Indianapolis, IN. (ERIC Document Reproduction Service No. ED 386 842)

Lou, Y., Abrami, P.C., & Spence, J.C. (1996). Within-class grouping: A meta-analysis. *Review of Educational Research, 66,* 423-458.

Loveless, T. (1998). The tracking and ability grouping debate. *Fordham Report, 2*(8). Retrieved October 12, 1999 from the World Wide Web: http://www.edexcellence.net/library/track.html

Lysakowski, R.S., & Walberg, H.J. (1981). Classroom reinforcement and learning: A quantitative synthesis. *Journal of Educational Research, 75,* 69-77.

Madden, N.A., Slavin, R.E., Karweit, N.L., Dolan, L.J., & Wasik, B.A. (1993). Success for All: Longitudinal effects of a restructuring program for inner-city elementary schools. *American Educational Research Journal, 30,* 123-148.

Makin, L. (1996). Is the salad sandwich blue?: Teacher questions and children's learning. *Australian Journal of Early Childhood, 21*(4), 1-5.

Mansfield, J.B. (1996). The effect of wait-time on issues of gender equity, academic achievement, and attitude toward a course. *Teacher Education and Practice, 12,* 86-93.

Martens, B.K., & Kelly, S.Q. (1993). A behavioral analysis of effective teaching. *School Psychology Quarterly, 8,* 10-26.

McCarthy, M.T., Webb, J.M., & Hancock, T.E. (1995). Form of feedback effects on verb learning and near-transfer tasks by sixth graders. *Contemporary Educational Psychology, 20,* 140-150.

McManus, S.M., & Gettinger, M. (1996). Teacher and student evaluations of cooperative learning and observed interactive behaviors. *Journal of Educational Research, 90,* 13-22.

Metcalf, K.K., & Cruickshank, D.R. (1991). Can teachers be trained to make clear presentations? *Journal of Educational Research, 85,* 107-116.

Mosteller, F. (1995). The Tennessee study of class size in the early school grades. *Future of Children, 5,* 113-127.

Noland, T.K., & Taylor, B.L. (1986, April). *The effects of ability grouping: A meta-analysis of research findings.* Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 269 451)

O'Conner, K. (1995). Guidelines for grading that support learning and student success. *NASSP Bulletin, 79,* 91-101.

Oakes, J. (1985). *Keeping track: How schools structure inequality.* New Haven, CT: Yale University Press.

Oakes, J., Wells, A.S., Jones, M., & Datnow, A. (1997). Detracking: The social construction of ability, cultural politics, and resistance to reform. *Teachers College Record, 98,* 482-510.

Orchard, J. (1996). A study of time utilisation in the reception class with particular reference to teacher-pupil interaction. *Early Child Development and Care, 115,* 125-139.

Paulson, S.E. (1994). Relations of parenting style and parental involvement with ninth-grade students' achievement. *Journal of Early Adolescence, 14,* 250-267.

Peterson, P.L., Wilkinson, L.C., & Hallinan, M. (Eds.) (1984). *The social context of instruction: Group organization and group processes.* New York: Academic Press.

Pierce, C. (1994). Importance of classroom climate for at-risk learners. *Journal of Educational Research, 88,* 37-42.

Polansky, H.B., & Johnson, D.R. (1996). Class size makes a difference, but .... *School Business Affairs, 62*(6), 50-52.

Porter, A.C., & Brophy, J. (1988). Synthesis of research on good teaching: Insights from the work of the Institute for Research on Teaching. *Educational Leadership, 45*(8), 74-85.

Purkey, S.C., & Smith, M.S. (1983). Effective schools: A review. *Elementary School Journal, 83,* 427-452.

Robinson, G.E. (1990). Synthesis of research on the effects of class size. *Educational Leadership, 47*(7), 80-90.

Robinson, G.E., & Wittebols, J.H. (1986). *Class size research: A related cluster analysis for decision making* [ERS Research Brief]. Arlington, VA: Educational Research Service.

Rosenshine, B. (1976). Recent research on teaching behaviors and student achievement. *Journal of Teacher Education, 27*(1), 61-64.

Rosenshine, B. (1995). Advances in research on instruction. *Journal of Educational Research, 88,* 262-268.

Rosenshine, B.V. (1986). Synthesis of research on explicit teaching. *Educational Leadership, 43*(7), 60-69.

Rosenshine, B., & Stevens, R. (1986). Teaching functions. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 376-391). New York: Macmillan.

Sammons, P., Hillman, J., & Mortimore, P. (1995). *Key characteristics of effective schools: A review of school effectiveness research.* London: University of London, International School Effectiveness & Improvement Centre. (ERIC Document Reproduction Service No. ED 389 826)

Sanders, M.G. (1996). *School-family-community partnerships and the academic achievement of African American, urban adolescents* (Report No. 7). Baltimore: Center for Research on the Education of Students Placed At Risk. (ERIC Document Reproduction Service No. ED 402 404)

Sattes, B.D. (1985). *Parent involvement: A review of the literature* (Occasional Paper No. 21). Charleston, WV: Appalachia Educational Laboratory.

Schneider, J.M. (1989). Tracking: A national perspective. *Equity and Choice, 6*(1), 11-17.

Schunk, D.H. (1984). Sequential attributional feedback and children's achievement behaviors. *Journal of Educational Psychology, 76,* 1159-1169.

Short, P.M. (1988). Effectively disciplined schools: Three themes from research. *NASSP Bulletin, 72,* 1-3.

Slavin, R.E. (1980). Cooperative learning. *Review of Educational Research, 50,* 315-342.

Slavin, R.E. (1987a). Ability grouping and student achievement in elementary schools: A best-evidence synthesis. *Review of Educational Research, 57,* 293-336.

Slavin, R.E. (1987b). Grouping for instruction: Equity and effectiveness. *Equity and Excellence, 23,* 31-36.

Slavin, R.E. (1988a). Cooperative learning and student achievement. *Educational Leadership, 46*(2), 31-33.

Slavin, R.E. (1988b). Synthesis of research on grouping in elementary and secondary schools. *Educational Leadership, 46*(1), 67-77.

Slavin, R.E. (1994). Quality, appropriateness, incentive, and time: A model of instructional effectiveness. *International Journal of Educational Research, 21,* 141-157.

Slavin, R.E. (1995). Cooperative learning and intergroup relations. In J.A. Banks and C.A.M. Banks (Eds.), *Handbook of research on multicultural education* (pp. 628-634). New York: Macmillan.

Slavin, R.E. (1996). Research on cooperative learning and achievement: What we know, what we need to know. *Contemporary Educational Psychology, 21,* 43-69.

Slavin, R.E., & Karweit, N.L. (1985). Effects of whole class, ability grouped, and individualized instruction on mathematics achievement. *American Educational Research Journal, 22,* 351-367.

Snyder, S., Bushure, L., Hoeksema, P., Olson, M., Clark, S., & Snyder, J. (1991, April). *The effect of instructional clarity and concept structure on student achievement and perception.* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL. (ERIC Document Reproduction Service No. ED 331 809)

Solomon, D., Watson, M.S., Delucchi, K.L., Schaps, E., & Battistich, V. (1988). Enhancing children's prosocial behavior in the classroom. *American Educational Research Journal, 25,* 527-554.

Stahl, S.A., & Clark, C.H. (1987). The effects of participatory expectations in classroom discussion on the learning of science vocabulary. *American Educational Research Journal, 24,* 541-555.

Stallings, J.A. (1985). A study of implementation of Madeline Hunter's model and its effects on students. *Journal of Educational Research, 78,* 325-337.

Stallings, J.A. (1980). Allocated academic learning time revisited, or beyond time on task. *Educational Researcher, 9*(11), 11-16.

Swift, J.N., & Gooding, C.T. (1983). Interaction of wait-time, feedback and questioning instruction on middle school science teaching. *Journal of Research in Science Teaching, 20,* 721-730.

Tangri, S., & Moles, O. (1987). Parents and the community. In V. Richardson-Koehler (Ed.), *Educators' handbook: A research perspective* (pp. 519-550). New York: Longman.

Tobin, K. (1987). The role of wait time in higher cognitive level learning. *Review of Educational Research, 57,* 69-95.

U.S. Department of Education. (1998). *Reducing class size: What do we know?* Washington, DC: Author. (ERIC Document Reproduction Service No. ED 420 108)

Voelkl, K.E. (1995). School warmth, student participation, and achievement. *Journal of Experimental Education, 63,* 127-138.

Walberg, H.J. (1984). Improving the productivity of America's schools. *Educational Leadership, 41*(8), 19-27.

Walberg, H.J., & Lane, J.J. (1985). The role of the administrator in school productivity. *Studies in Educational Evaluation, 11,* 217-230.

Walberg, H.J., Paschal, R.A., & Weinstein, R. (1985). Homework's powerful effects on learning. *Educational Leadership, 42*(7), 76-79.

Wang, M.C., Haertel, G.D., & Walberg, H.J. (1995). *Research on school effects in urban schools (*Report No. 95-12). Philadelphia: National Research Center on Education in the Inner Cities. (ERIC Document Reproduction Service No. ED 406 504)

Watson, T., Brown, M., & Swick, K.J. (1983). The relationship of parents' support to children's school achievement. *Child Welfare, 62,* 175-180.

Wayson, W.W., & Lasley, T.J. (1984). Climates for excellence: Schools that foster self-discipline. *Phi Delta Kappan, 65,* 419-421.

Weade, R., & Evertson, C.M. (1988). The construction of lessons in effective and less effective classrooms. *Teaching & Teacher Education, 4,* 189-213.

Wenglinsky, H. (1998). *A policy information memorandum. The effect of class size on achievement: What the research says.* Princeton, NJ: Educational Testing Service, Policy Information Center. Retrieved October 27, 1999 from the World Wide Web: http://www.ets.org/research/pic/memorandum.html

Wenglinsky, H. (1997). *When money matters: How educational expenditures improve student performance and how they don't.* Princeton, NJ: Educational Testing Service. (ERIC Document Reproduction Service No. ED 412 271)

Williams, D.L., Jr., & Chavkin, N.F. (1989). Essential elements of strong parent involvement programs. *Educational Leadership, 47*(2), 18-20.

Woods, E.G. (1995). *Reducing the dropout rate* (Close-up No. 17). Portland, OR: Northwest Regional Educational Laboratory.

Yap, K.O., & Enoki, D.Y. (1995). In search of the elusive magic bullet: Parental involvement and student outcomes. *School Community Journal, 5,* 97-106.

Zigarelli, M.A. (1996). An empirical test of conclusions from effective schools research. *Journal of Educational Research, 90,* 103-110.

Northwest Regional Educational Laboratory
Portland, Oregon USA

Association for Supervision and Curriculum Development
Alexandria, Virginia USA

BEST COPY AVAILABLE

U.S. DEPARTMENT OF EDUCATION

OFFICE OF EDUCATIONAL RESEARCH AND IMPROVEMENT (OERI)

EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

REPRODUCTION RELEASE (Specific Document)

I. DOCUMENT IDENTIFICATION

Title: THE SCHOOLING PRACTICES THAT MATTER MOST

Author(s): Kathleen Cotton

Corporate Source (if appropriate): Northwest Regional Educational Laboratory

Publication Date: 3/00

II. REPRODUCTION RELEASE

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, Resources in Education (RIE), are usually made available to users in microfiche and paper copy (or microfiche only) and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce the identified document, please CHECK ONE of the options and sign the release below.

CHECK HERE ➧ [XX] Microfiche (4" x 6" film) and paper copy (8½" x 11") reproduction

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

[PERSONAL NAME OR ORGANIZATION AS APPROPRIATE]

Northwest Regional Educational Laboratory

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

OR [ ] Microfiche (4" x 6" film) reproduction only

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

[PERSONAL NAME OR ORGANIZATION AS APPROPRIATE]

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Documents will be processed as indicated provided reproduction quality permits. If permission to reproduce is granted, but neither box is checked, documents will be processed in both microfiche and paper copy.

"I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce this document as indicated above. Reproduction from the ERIC microfiche by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction of microfiche by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries."

SIGN HERE ➧

Signature: Dave Wilson Printed Name: Dave Wilson

Organization: Director, Development and Communications

Northwest Regional Educational Laboratory

Address: 101 SW Main Street, Suite 500 Tel. No.: (503) 275-9517

Portland, OR Zip Code: 97204-3297 Date: 8/6/02

III. DOCUMENT AVAILABILITY INFORMATION (Non-ERIC Source)

If permission to reproduce is not granted to ERIC, or, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents which cannot be made available through EDRS.)

Publisher/Distributor:

Address:

Price Per Copy: Quantity Price:

IV. REFERRAL TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER

If the right to grant reproduction release is held by someone other than the addressee, please provide the appropriate name and address: